DOCUMENT RESUME

ED 401 057 RC 020 737

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TITLE Rural Schools: Resource Inequalities Persist.
PUB DATE [30 Mar 96]
NOTE 11p.; Paper presented at the National Conference on Creating the Quality School (Oklahoma City, OK, March 28-30, 1996).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Educational Equity (Finance); Elementary Secondary Education; *Finance Reform; Poverty Areas; Rural Schools; *Rural Urban Differences; School Districts; *School District Spending; *School District Wealth; Small Towns; State Federal Aid; *State School District Relationship
IDENTIFIERS *Pennsylvania

ABSTRACT

In spite of 1983 legislation intended to equalize financial differences among school districts, Pennsylvania continues to experience inequalities in school funding. A study of Pennsylvania school finance over a 10-year period, 1984-85 through 1993-94, examined differences in spending among the 25 lowest spending districts (Lo-25) and the 25 highest spending districts (Hi-25) in relation to their location, size, wealth, revenue sources, and effort. The Lo-25 districts were all small towns and rural areas. The Hi-25 were suburban districts near the two largest urban centers and urban districts in Pittsburgh. The difference in spending between the Lo-25 and the Hi-25 remained at a 2:1 ratio over the 10-year period. The differences in wealth per student between the two groups increased, such that in 1993-94 the Hi-25 had over four times as much wealth per student as the Lo-25. In 9 of the 10 years, the Hi-25 equaled or surpassed the Lo-25 in their local tax effort. The Hi-25 received more federal revenue per student in each of the 10 years. Since the Pennsylvania constitution requires the state to provide "a thorough and efficient system of public education" to its children regardless of where they reside, the state will have to increase appropriations or reallocate existing funds to low spending districts. Contains references and data tables on expenditure, wealth, and effort ratios between high and low expenditure districts and on ratios for general fund revenue per Average Daily Membership (ADM) between high and low expenditure districts. (Contains 10 references.) (TD)

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NATIONAL CONFERENCE ON CREATING THE QUALITY SCHOOL

Oklahoma City, Oklahoma
March 28-30, 1996

ED 401 057

RURAL SCHOOLS: RESOURCE INEQUALITIES PERSIST

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ABSTRACT

Rural schools continue to experience inequalities in the funding of resources. In Pennsylvania, for example, the lowest spending districts (based on expenditures per pupil) are small towns and rural areas. The difference in spending between these districts and the top spending districts remained at a ratio of 2:1 over the ten-year period, 1984-85 through 1993-94. This research examined differences in spending among districts in relation to their location, size, wealth, revenue sources, and effort.

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RURAL SCHOOLS: RESOURCE INEQUALITIES PERSIST

Introduction

Not all rural communities are poor; they are a diverse group. But our nation's poorest counties are located in rural areas. The rate of poverty through the 1980s remained more severe in rural than in metropolitan areas. Rural per capita income also declined substantially during the 1980s (DeYoung and Lawrence, 1995).

Poverty is not only more prevalent in general in rural areas; it is acutely found in the school-age population. When comparing 1990 with 1970, the percentage of school-age children in poverty has continued above 20 percent. Predictions for the future indicate that rural schooling will occur in communities with more severe economic conditions than those in metropolitan areas (Ronan Herzog and Pittman, 1995).

Studies on youth migration reveal a greater tendency for graduates from rural schools to move away from their communities than do suburban or urban youth. One study found that, within six years of their schooling experience, 41.3% of the rural youth had moved more than 50 miles from their homes. For suburban and urban youth the percentages were 32.0% and 23.9%, respectively. 'Because of this migration by rural youth, rural schools are challenged to prepare their youth for success in complex, professional and technical occupations in metropolitan environments (Ward and Anthony, 1992, pp. 58, 67).

The purpose of this research was to examine the relationship between selected fiscal variables and spending differences among schools in Pennsylvania. Schools in Pennsylvania range in location from rural, mountainous areas to large urban centers. A major concern was to identify the relationship of a school district's location to these spending and fiscal differences.

The Pennsylvania Story

In 1983, Pennsylvania adopted a state subsidy formula for local school districts (Act 73) which continued in place through 1993-94. The formula, named the "Equalized Subsidy for Basic Education" (ESBE), was first implemented in fiscal year 1983-84. At the same time, work was underway to change the accounting system. This new system was introduced statewide in 1984-85.

Each year following 1983, the legislature amended the ESBE formula by changing the dollar amount of the factor for educational expense (FEE) and by adding

provisions to supplement the base subsidy. (In its title, "Basic Education" refers to K-12 schooling, not a minimal educational program.) The formula, however, continued to be driven by the number of students in the district, the district's wealth, its incidence of student poverty, its local effort to fund education, and the population of the district. These factors determined the overwhelming amount of funds distributed by the Commonwealth to "equalize" financial differences among the districts.

The debate on Pennsylvania's school finance system intensified with the filing in January 1991 of a class action suit in the Commonwealth Court of Pennsylvania. The Pennsylvania Association of Rural and Small Schools (PARSS) was joined by individual school districts and students in suing the governor and secretary of education in what is known as PARSS et al. vs. Casey. The complaint alleges that Pennsylvania's method of funding instructional expenses in public schools is unconstitutional because it violates the education clause of the Pennsylvania Constitution, the right to equal protection of the laws guaranteed by the Pennsylvania Constitution, and the Fourteenth Amendment to the United States Constitution.

Studies of Pennsylvania school finance during the 1980's revealed significant disparities. When the sixteen districts that had the highest actual instruction expense per student were compared to the sixteen lowest districts in 1982, the gap across each year through 1988 was found to be large and persistent (Cooley, 1989). Moreover, when the 100 richest and 100 poorest districts were compared between 1985 and 1989, state funding increased more for the rich (42%) than for the poor (36%). And, even though local revenues also increased more for the rich (37% vs. 22%), local tax effort for the rich decreased 5% while it increased 6% for the poor (Cooley, 1991).

In his budget address to the Pennsylvania legislature on February 9, 1993, the governor admitted frankly, "Our current subsidy system hasn't closed the gap. The richest districts are still spending almost three times as much as the poorest districts" (Casey, 1993, p. 10). After the filing of the PARSS case (1991), the governor submitted budgets to the legislature which augmented the ESBE payments. An equity supplement of $100 million to aid low spending school districts or to aid school districts with a higher percentage of students from low-income families was implemented for 1993-94. Districts which did not qualify for the new equity funding found their ESBE amounts frozen at 1992-93 levels. The PARSS case has not come to trial or otherwise been settled as of this date.

Method

To identify the highest and lowest spending districts in the state, a list of districts by rank on total expenditures per student was used. For this analysis, financial and enrollment data were extracted from reports compiled and issued by the Pennsylvania Department of Education. These data covered fiscal years 1984-85 through 1993-94. Market values of real property were those determined by the Pennsylvania State Tax Equalization Board.

In the distribution of districts by total expenditures per average daily membership (Exp/ADM), the highest 5% and the lowest 5% were selected. Based on the 500 operating school districts in Pennsylvania, this process yielded the 25 highest spending districts (Hi-25) and the 25 lowest spending districts (Lo-25). (One non-operating district was eliminated from the total distribution of 501 districts.) If a district had unusually high expenditures for Other Uses which inflated its Exp/ADM, that district was removed from the analysis. (An example of an extraordinary Other Use is the retirement of a bond issue through refinancing.)

For each district, data for the following variables were extracted from the state reports:

Average daily membership, total expenditures,
total local revenue, total state revenue,
total federal revenue, market value of real property

These data were then totaled for all districts in each group on each variable. The per student amount was found by dividing the group totals by the group ADM. This process was repeated for each of the ten years presented below.

To avoid the problem of differing ADMs among the districts, district means were not used. The individual student, not the district, was selected as the unit of analysis (see Odden and Picus, 1992). Therefore, averages and percentages derived from these totals represent group values, not district values.

Differences between groups were analyzed by computing ratios. The value for the higher Exp/ADM group was used as the numerator; the value for the lower Exp/ADM group, as the denominator. The process followed the "winners-and-losers" ratio design.

Ratios, expressed as mixed numbers, may be interpreted as follows:

1. Ratios equal to or approaching 1.00 indicate parity between the groups.

2. Ratios greater than 1.00 (e.g. 2.00, 3.25) indicate the Hi-25 group had the greater value.

3. Ratios lesser than 1.00 (e.g. .90, .85) indicate that the Lo-25 group had the greater value.

Data for more than one year permit trends to be examined. Line graphs provide a visual impression of the trend. The computation of linear regression and simple correlation between time (year) and a fiscal variable provide a more precise statistical assessment of the trend. A negative correlation indicates that a ratio has tended to decrease across time; a positive correlation, that the ratio has tended to increase.

Results

Location and Size. Membership in the Hi-25 or Lo-25 is somewhat fluid. On the whole, the Hi-25 tended to have more stable membership than did the Lo-25. It appears more likely that "once a high spender, always a high spender"--but not necessarily for low spenders. Consistent members of the Lo-25 were in four counties which border each other in or near the Allegheny Mountains of south central Pennsylvania (Somerset, Bedford, Blair, and Cambria). Continuing through the mountains to the east-northeast, three more districts and counties (Huntingdon, Juniata, and Perry) may be added. Skipping through the mountains farther to the northeast, one more district in Columbia county joins the Lo-25. The remainder were scattered in the northwestern corner of the state (Erie, Venango, Clarion, and Lawrence counties) and in rural areas of neighboring counties (Lancaster and York) in southeastern Pennsylvania.

None of the Lo-25 was an urban center. Although the largest district had an enrollment of more than 4,000 ADM, the average size was about 2,250 ADM. As noted above, many of the Lo-25 were on the eastern slope of the physical feature called the Allegheny Front. The valleys between the ridges of the Allegheny Mountains often contain good farmland, although the farms may be small. A few Lo-25 districts are in fertile agricultural areas, but most are in mountainous or hilly regions having little or no business/industrial economy.

The Hi-25 spenders were located in five counties. Allegheny County including Pittsburgh is one cluster of districts. The majority of the Hi-25 were in four counties

surrounding, but excluding, Philadelphia (Bucks, Chester, Delaware, and Montgomery). With the exception of Pittsburgh, the persistent high spenders were suburban districts near the state's two largest urban centers. No county contained both a Hi-25 and a Lo-25 district.

About twice as many students attended school in the Hi-25 than in the Lo-25 spending districts. The Hi-25 accounted for 7.2% of the state's ADM in 1993-94, while the Lo-25 accounted for 3.3%. Without Pittsburgh, the two groups of districts were very similar in size. In both groups, districts tended to range between 1,000 and 5,000 ADM. In fact, the Hi-25 generally contained more districts with less than 1,000 ADM than did the Lo-25.

Comparisons between the high and low spending districts in Pennsylvania are reported in Tables 1 and 2. Rather than expressing the ratios in the form 2:1, they are reported as mixed numbers as explained in the previous section.

Expenditures. In Table 1, the Hi-25/Lo-25 comparisons produced ratios which remained slightly above 2.00. The largest decrease in the ratio occurred between 1990-91 and 1991-92. Between 1991-92 and 1992-93 was the largest increase. In 1993-94 the ratio reached the previous high of 2.21 in 1987-88. Although a trend of decreasing ratios is desirable from an equality perspective, the difference after ten years between the two groups was still more than 2 to 1. The correlation between ratio and year across this period was virtually zero ($r = .012$).

Wealth. The ratios pertaining to wealth per student reveal a generally increasing difference between the Hi-25 and Lo-25. The high spending districts passed the point of having more than four times as much wealth per student as did the low spending ones, then dropped slightly below 4.00 in 1993-94. The very high positive correlation with time underscores how the situation has worsened across time. This wealth factor, which is based on property values, is the principal source for producing local revenue.

When wealth is measured by the estimated market value of real property, the Hi-25 accounted for approximately 14% of the entire wealth of Pennsylvania. In contrast, the Lo-25 accounted for about 2% of the state's wealth. The Hi-25 districts apparently enjoyed greater economic growth and were thus better able to support public schools when the state finance system relied more heavily on local than state revenues.

Effort. "Wealth" indicates a district's ability to support schools, but "effort"

is a term to describe the degree to which a district actually uses its wealth. Pennsylvania uses the concept of equalized mills to equate for differences in assessment practices across the Commonwealth. For this analysis, a measure of local effort was computed by dividing the revenue raised locally by the market value of property. This number was converted to mills by multiplying by 1000.

One often hears that the low spending districts are taxing themselves more heavily in proportion to their wealth than are the high spending districts. The ratios in Table 1 refute this notion. In nine of the ten years, the Hi-25 equaled or surpassed the Lo-25 in their local tax effort. The rather strong negative correlation does indicate a trend towards parity. Ratios below 1.00 would be needed to support the premise that low spending districts put forth a greater effort in taxing their local wealth.

Local Revenue. The ratios in the column labeled "Local" in Table 2 indicate that the Hi-25 raised four times as much local revenue per student than did the Lo-25. Moreover, the strong positive correlation reveals that as time passed the Hi-25 tended to increase the difference between themselves and the Lo-25. This outcome would be expected when the state is attempting to balance resources so long as the amount from the state brings about parity in overall revenue.

State Revenue. All ratios were below 1.00, indicating that the Lo-25 received more state revenue per student than did the Hi-25. Moreover, the very strong negative correlation reveals that as time passed the Lo-25 received a proportionately greater amount of state revenue per student.

Local + State Revenue (L + S). Although the Lo-25 results for the state ratios were favorable in a equity sense, the total revenue from local and state sources continued to favor the Hi-25 by a 2 to 1 margin. Since 1990-91, the ratio declined each year to 1.90 in 1993-94. The overall outcome suggests that Lo-25 schools may have used their increased state revenue to replace local revenue rather than to increase their overall amount of revenue.

Federal. Although the ratios show a somewhat improving situation for the Lo-25, the Hi-25 received more federal revenue per student in each of the ten years. These results indicate that federal revenue tends to worsen rather than ameliorate differences in revenue between the Hi-25 and Lo-25.

Total Revenue. Because federal revenue was small, the total with it included varies little from the results for local plus state (L + S) revenue. The Hi-25 continued to raise about twice as much revenue per student than did the Lo-25. The proportion of revenue by source was fairly stable in Hi-25 schools. Their split tended to be 75%

local, 22% state, and 3% federal. In recent years, Lo-25 schools tended to become more dependent on state sources. Their split was approximately 37% local, 59% state, and 4% federal. In the mid 80s, their percents for local and state were 46% and 52%, respectively. This change in pattern suggests that the state formula was narrowing the gap in expenditures between the Hi-25 and Lo-25, but the gap continued to remain at near 2:1.

Issues. The use of ratios provides a method for assessing equality or parity on fiscal variables. These ratios cannot answer questions about educational quality or financial equity. Equity, as an outcome, requires the specification of a set of values and standards to determine fairness. Unequal expenditures may be quite justified on this basis. Moreover, equality measures assume a uniform purchasing value for the dollar. Districts having high wealth as measured by property values may have to pay higher salaries in order to attract teachers and administrators to live in them. Therefore, the method presented herein may best be used to help raise questions rather than to mandate action.

For the ten years studied in Pennsylvania, the differences in fiscal resources per student between the Hi-25 and Lo-25 districts appear to have changed very little. As the state has attempted to boost state aid to the low spending districts, the data suggest that the low spending districts simply replaced local revenue with state revenue. In the meantime, high spending districts appear to have increased their dependence on local revenue. In many of these districts, this increase has generated taxpayer revolt and a backlash against schools which otherwise have outstanding records of educational success.

The Lo-25, all of which were small towns and rural areas, have depended heavily on state aid. If state appropriations for schools do not increase or if existing funds are not reallocated, the Lo-25 will be required to exert greater local effort or else fall even farther behind the Hi-25. Although the effort ratios suggest that the Lo-25 were not matching the Hi-25, the wealth of the Lo-25 has not grown as rapidly as that of the Hi-25. If greater equality in expenditures is sought, the state must redesign its funding system. Pennsylvania, in accord with its constitution, should provide "a thorough and efficient system of public education" to its children and youth regardless of where they reside.

Table 1. Expenditure, Wealth, and Effort Ratios between High and Low Expenditure Districts

Year	Expenditures/ADM	Wealth/ADM	Effort
1993-94	2.21	3.91	1.03
1992-93	2.17	4.34	0.95
1991-92	2.01	4.36	1.04
1990-91	2.12	4.06	1.02
1989-90	2.13	3.92	1.00
1988-89	2.19	3.48	1.13
1987-88	2.21	3.22	1.28
1986-87	2.15	2.79	1.28
1985-86	2.12	2.80	1.25
1984-85	2.13	2.69	1.30
Mean	2.144	3.557	1.128
Std Dev	0.059	0.650	0.136
Correlation	+.012	+.920	-.892

Table 2. Ratios for General Fund Revenue Per ADM between High and Low Expenditure Districts

	Revenue				
Year	Local	State	L + S	Federal	Total
1993-94	4.03	0.70	1.90	1.47	1.89
1992-93	4.15	0.69	1.94	1.46	1.93
1991-92	4.53	0.72	1.99	1.34	1.97
1990-91	4.11	0.72	2.03	1.35	2.00
1989-90	3.92	0.69	1.93	1.50	1.91
1988-89	3.92	0.78	2.05	1.58	2.03
1987-88	4.12	0.82	2.15	1.74	2.14
1986-87	3.59	0.86	2.08	2.51	2.09
1985-86	3.51	0.82	2.02	2.26	2.02
1984-85	3.50	0.90	2.12	2.14	2.12
Mean	3.938	0.770	2.021	1.735	2.010
Std Dev	0.327	0.077	0.082	0.418	0.087
Correlation	+.781	-.910	-.772	-.823	-.808

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